ROCOM

EC II GSM SE
User Manual

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2 Notes and disclaimer

We would like to thank you for placing your confidence in Rocom Energie- und Kommunikationssysteme GmbH and are convinced about the choice of one of our security products fulfils your expectations. In order to operate this EC II GSM SE correctly we would ask you to read this manual carefully.

The contents of this document may be changed without prior notice due to the continuous development of methods, design and manufacturing. Rocom Energie- und Kommunikationssysteme GmbH disclaims any responsibility for damage caused by possible errors in this document.

Some of the functionality described in this document is not available in earlier product releases. Contact your local distributor or Rocom GmbH for more information. Please visit our website www.rocom-gmbh.com where the latest product documentations are found.

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3.1 Warranty

There is a 2-year warranty (24 months) for manufacturing failure or material failure commencing with the delivery date.

Warranty does not include:

- Incorrect or careless usage
- Damages caused by thunderstorms or air pollution.
- Vandalism or damage.
- Normal wear
- Emergency power supply battery

Rocom Energie- und Kommuikationssysteme GmbH reserves the right to determine if the product will be repaired or replaced. Warranty ceases to be valid if defects occur due to incorrect use, or other method of application, or context that has been specified in this manual.

3.2 Updates

Visit our website to get access to the latest updates for market information and technical documentation. Following information can be found:

- Product surveys
- Market material
- Updated user manual
- Software and available updates
- Installation and maintenance instructions
- Contact information

www.rocom-gmbh.com

3.3 Repair return procedure

Rocom Energie- und Kommunikationssysteme GmbH only accepts returns, which are accompanied by a completed ticket, which can be on our webside on the support page. If the

product is purchased from one of our distributors the buyer must first contact the distributors for assistance. Please note that the battery cannot be enclosed at return of goods.

All returns must be sent well packed with freight paid to the address:

Service department
Rocom Energie- und Kommunikationssysteme GmbH
Lessingstr. 20
63110 Rodgau, Germany

Repaired products are sent to customers as a regular post parcel with freight paid on the assumption that the product is included by warranty. If the investigation shows that there are no defects on the returned product the customer is charged with a service fee and freight charge. The customer can ask for a quotation for repair of product not covered by warranty.

4 General

4.1 Contents of packing

Packing for EC II GSM SE contains following parts:

Central unit, includes:
- Central unit
- Programming Guide
- Mounting screws
- Cable tie
- Modular cable, 3 meter
- GSM-antenna

Battery,
- Battery 12V 2Ah

The type of speech unit to be delivered is decided when you place the order. Below is a list of some of the available types but there are also other speech units. Please contact your local distributor or Rocom GmbH for more information.

Speech Unit EC II SE, includes:
- Speech unit
- Mounting frame
- Mounting screws
- Label

Speech Unit Behind COP SE, includes:
- Speech unit behind COP
- Mounting screws
- Label

Speech Unit EC II SE ALBU, includes:
- Speech unit with integrated double breaking alarm button
- Mounting frame
- Mounting screws
- Label

4.1.1 Accessories

Following parts can be ordered separately from Rocom GmbH or from our distributors:

- Surface mounting alarm button with double-breaking function.
- External alarm button with internal microphone (ALBU), 8m cable
- Emergency light 12V 5W
- Battery 12V 2Ah
- Telephone handset for intercom
- Loop Amplifier

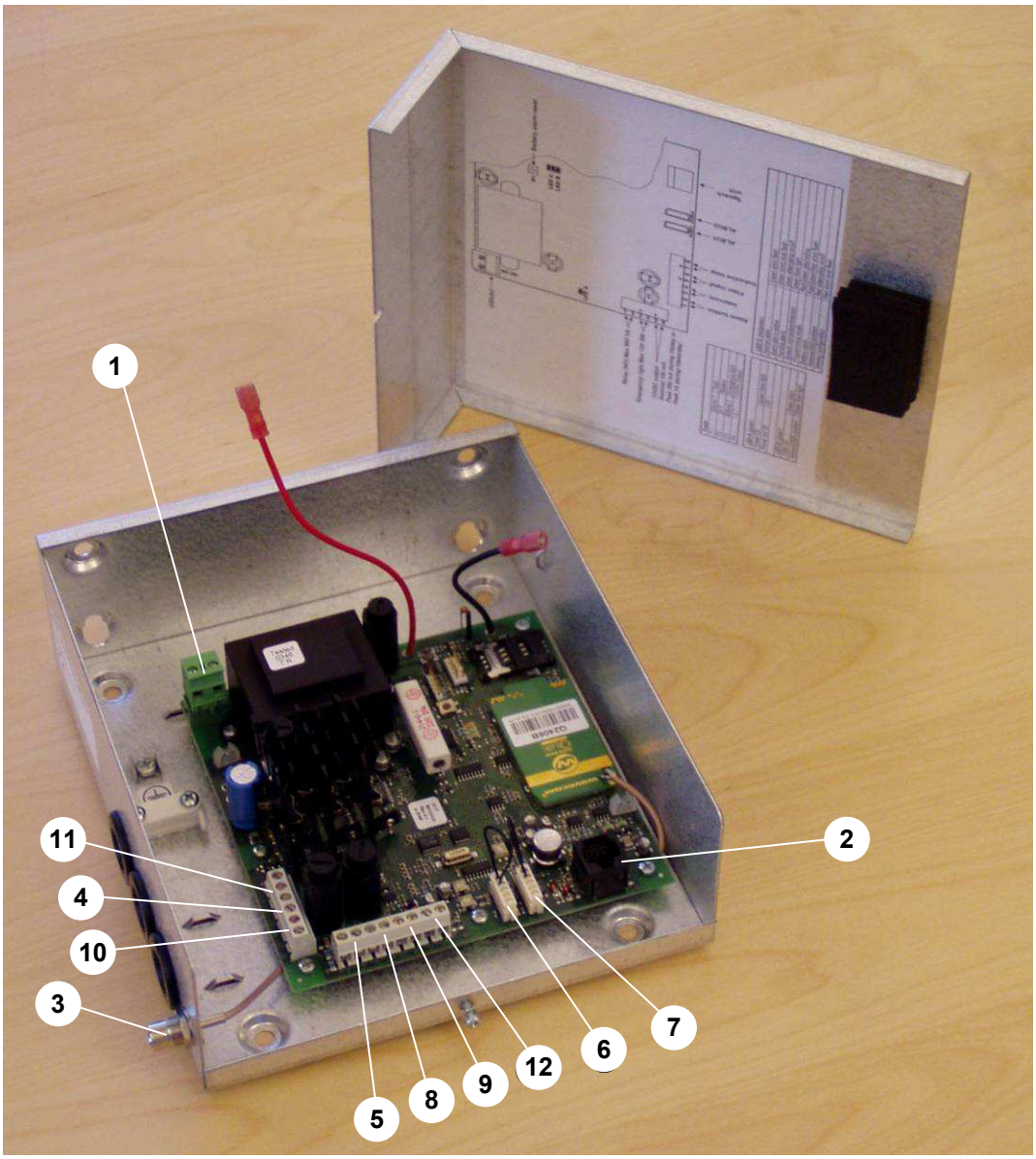
4.2 Technical data

4.2.1 Physical dimensions and functions

Data Speech Unit:	***EC II SE***	***EC II COP SE***	***EC II ALBU***
Size:	125x125x23 mm	105x90x26 mm	180x125x25 mm
Weight:	280 g	215 g	325 g
Material:	1.5 mm stainless steel	0.7 mm AluZink	1.5 mm stainless steel

Data:	***Central unit***	***Speech units***
Size:	185x200x75 mm	See above
Weight, excl. battery:	1780 g	See above
Operating temperature:	+5°C to +40°C	+5°C to +40°C
Air humidity:	30 % to 90 %	30 % to 90 %
Casing material:	1.25 mm AluZink	See above
Emergency power:	Battery 12V 2Ah	Powered by Central unit
Power supply:	230V / 0.1A / 50-60Hz	Powered by Central unit
Indications:	Three LED. One is two-colored	Yellow and green LED and sound Pictogram on front plate
Installation:	On top of lift car	Inside lift car (behind COP or with frame)
Alarm button inputs:	Three inputs of which two with microphone (ALBU)	One input
LED outputs:	-	12VDC, max 20mA
Antenna:	External 50 Ω	-
GSM:	Dual band 900/1800 MHz	-
Programming:	By keypad or remote programming via SMS	
Protocol:	CPC and P100	
Signaling:	DTMF	
Speech switchover:	Duplex or simplex	
Test alarm:	Interval between 1-9 days	
Battery alarm:	Automatically	
Alarm receiving:	Contact your local distributor for information of alarm centers that accepts the CPC or P100 protocol. Any phone with tone selection (with buttons * and #) is suitable as alarm receiver.	
Connection Cable:	A three meter standard Ethernet cable with 8 wires is included in the deliverance for connecting the speech unit and the central unit	

4.3 Connections on central unit



Central unit connections below marked

Function:	***Connection:***	***Data:***
1. Power supply:	2-pol. screw terminal block	230V AC 50-60 Hz
2. Speech unit:	RJ-45	
3. Antenna connection:	FME/f	
4. Emergency light:	2-pol. screw terminal block	Max 12V 5W
5. Alarm button 1:	2-pol. screw terminal block	
6. Alarm button 2 (ALBU):	5-polig SPOX 2.50 mm	Adapted for Part No. 2122
7. Alarm button 3 (ALBU):	5-polig SPOX 2.50 mm	Adapted for Part No. 2122
8. Intercom:	2-pol. screw terminal block	For standard telephone according to TBR21
9. Filter connection:	2-pol. screw terminal block	Optional active high/low
10. 12VDC output:	2-pol. screw terminal block	Nominal load 100 mA/Max 500 mA
11. Relay output:	2-pol. screw terminal block	Max 50V 1A
12. Loop amplifier:	2-pol. screw terminal block	Signal between 50-100 mV/1 kΩ impedance

5 Introduction

5.1 Foreword

We recommend a carefully reading of this user manual before EC II GSM SE is put into operation, to ensure that the product is used safely and effectively.

EC II GSM SE should only be used in the context for which it is intended. All other form of usage will be considered as being solely the users own risk. Only qualified persons are permitted to install, program and start-up this product. Start-up is only allowed after the product has been properly installed. As a consequence Rocom GmbHdisclaims all responsibility for possible defects, operational disturbance, accidents etc. caused by lack of knowledge or carelessness from the user. The same principle is valid for all not approved changes to the product.

EC II GSM SE uses a GSM standard for mobile telephony. The product can consequently not be used in areas without satisfactory coverage. Since the GSM system is using radio based technology, disturbances may occur when using other telephone- or radio sets which are not sufficiently protected against radio waves. The product is following valid security standards for exposure of electromagnetic radiation.

Rocom GmbH reserves the right to make changes in the product for functional or commercial reasons. The company is not forced to immediately update reference manuals.

EC II GSM SE cannot be used:

- *On places where there are an explosion hazard.*
- *On places where chemical substances are used in a greater extent with particular regard to safety rules for environments filled with unstable gases or fumes.*

5.2 Product description

EC II GSM SE is an alarm equipment for the GSM network with built in duplex speech communication designed for installation in lifts. It complies with requirements according to EN81:1–2 and EN81:28. The product is CE-marked.

The system consists of two separate units, one central unit which is mounted on top of the roof of the lift and one speech unit that is mounted inside the lift car and the two units are joined together with a modular cable.

When someone inside the lift pushes the alarm button, the EC II GSM SE automatically calls an alarm centre or a predefined alarm receiver and indicates where the alarm comes from. At the same time voice communications is established and the person in distress can speak directly to staff at the alarm centre from where help will be dispatched.

EC II GSM SE is normally programmed via a keypad on the rear side of the speech unit but can also be remote programmed via SMS.

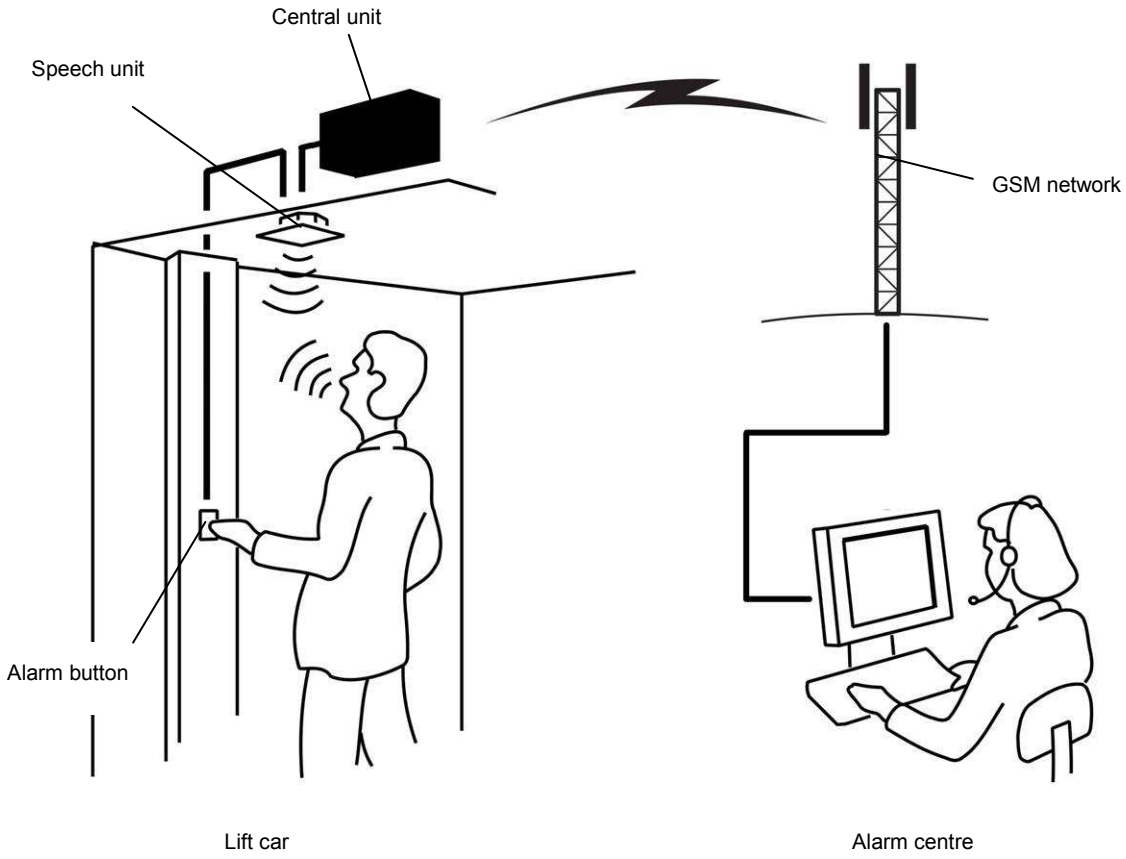
5.2.1 Overview of EC II GSM SE functionality

The central unit of the EC II GSM SE is not visible to the passengers of the lift. It is mounted on the roof of the lift car. Its function is to initiate, transmit and monitor alarm calls from the speech unit in the lift to the alarm centre through the GSM network. The central unit contains a printed circuit board with a GSM module and an emergency power supply with a lead acid

battery. Most of the external connections such as antenna, alarm button/s, mains powers etc. are made to the central unit.

The speech unit of the EC II GSM SE is available in several different versions where some of them can be mounted visible for the lift passenger. The user then only sees the lift phone as a discreetly designed panel with perforated screen plate for the loudspeaker and microphone. On the lift phone front plate there is a laser engraved pictogram and two LED that indicates the alarm and the GSM network status. The space-saving design of the speech unit facilitates mounting within the lift car. Loudspeaker, microphone and keypad for programming are integrated in one single unit. This means quick and easy installation as well as high reliability in operation.

The speech unit can be mounted on the wall, behind the wall or on ceiling of the lift car, which eliminates the need to make holes other than those needed for the modular cable. Interconnection of the central unit and speech unit is very quick and simple since a standard modular cable is used.



5.2.1.1 Alarm calls

EC II GSM SE is activated with a standard alarm button in the lift or, if required, with a separate alarm button. There is also a version of the speech unit which has an integrated alarm button. It is possible to install up to two separate alarm buttons with built-in microphones. These alarm buttons are intended for mounting on top of or below the lift car to be reached by a trapped technician. When someone presses the alarm button for more than 5 seconds, the alarm calling process is activated in the EC II GSM SE. Time delay is programmable between 1 and 30 seconds. EC II GSM SE can call up to six different alarm receivers or ordinary tone dialing telephones. Two alarm numbers can be programmed to use a special alarm code to

identify EC II GSM SE in an alarm centre. It is also possible to have an SMS sent together or instead of the speech connecting alarm.

5.2.1.2 Programming

The rear side of the speech unit has a keypad for programming call numbers, function selection and testing. There are also connectors for the central unit, an alarm button and two external illuminated pictograms. All settings are made during the installation and, normally, no subsequent changes are required. It is however also possible to program the EC II GSM SE remotely via SMS.

5.2.1.3 Incoming calls

To contact possible trapped persons there is the possibility to phone in to the EC II GSM SE. Normally it is open for incoming calls but the function can be shut down or programmed so that it only allows incoming calls only after a lift alarm has occurred.

5.2.1.4 Power supply

The built-in emergency power supply monitors and tests the battery regularly. If the battery becomes bad and needs to be replaced, a battery alarm is sent to an alarm receiver. It is also possible to manually reset a battery alarm with a button on the printed circuit board on the central unit. The product cannot be used without a mounted and connected battery.

5.2.1.5 Emergency light

It is possible to connect the lift's emergency light to EC II GSM SE, which automatically turns the light on when the mains power is cut off. When the mains return the emergency light is switched off. In the central unit there is a 12V DC output, which can be used for external equipments such as an alarm bell or a loop amplifier for hearing impaired people. The output is connected to voltage even after power failure, on the condition that the emergency power supply has not been disconnected from the battery to protect it against deep discharging. Together with the relay output on central unit, these two outputs can be used for, example, to activate an external alarm bell. The relay actuates every time any of the alarm buttons are activated but can also be activated remotely.

5.2.1.6 Intercom

There is a possibility to connect an intercom telephone to the central unit for communications between the lift car and, for example, the machine room of the lift. Most telephones can be used, but they must be approved for connection to the public telephone network (TBR21 approved). The intercom starts when telephone receiver is lifted and finishes when the telephone receiver is hung up. If a lift alarm should occur while intercom is in progress the lift alarm has priority and will disconnect the intercom.

5.2.1.7 Automatic test alarm

EC II GSM SE can be set to send an automatic test alarm to a dedicated test alarm receiver with an interval of 1–9 days. The alarm is send soundlessly and tests the electronics and reception quality of the EC II GSM SE If the test alarm should not occur, an alarm will be activated at the alarm centre and personnel can be sent to the lift to investigate and take care of possible defects.

5.2.1.8 Filtering

To reduce the number of false alarms it is possible to connect EC II GSM SE with the control equipment of the lift to the filter input. Then it is possible to filter out all alarms attempts from the lift if the function is normal to reduce the workload on the alarm centre. For security reasons no external alarm buttons (ALBU´s) are included by the filtering.

5.2.1.9 Loop amplifier

There is the possibility to connect a loop amplifier to the central unit which makes it easier for people with impaired hearing to hear what is said in the speech unit. Check with your local distributor or Rocom GmbH for information about approved loop amplifier units to connect to EC II GSM SE.

5.2.1.10 Technical alarms

In some cases a technical alarm needs to be sent from the lift to the alarm receiver to indicate a fault in the installation. One of the two available alarm button inputs can be used for that purpose. If the alarm button input in the speech unit is connected to the alarm button in the lift the free input in the central unit can be used for technical alarms.

The inputs are default set to breaking function which means that an alarm is generated when opening up the circuit. The alarm type for the alarm is default set to 10d but must be change with a programming sequence, see section 8.4.11 below. The technical alarm output from the lift must be able to generate an open or close signal. Note that the alarm receiver must be able to receive the alarm type that is used for technical alarms.

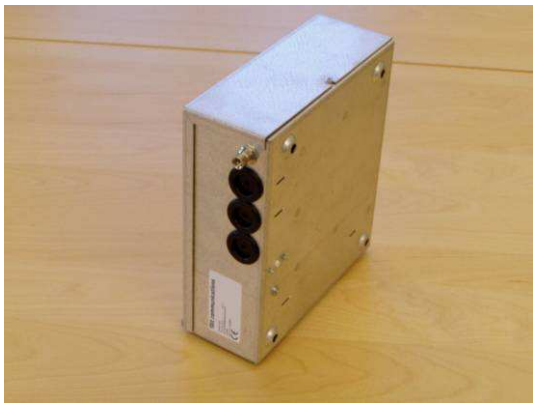
6 Installation

Only competent and qualified personnel may install the EC II GSM SE. Knowledge, technical skill and correct equipment are required for safe and efficient installation.

> ***Warning!***
> *Mind your own safety when installing EC II GSM SE. You must never work in an open lift shaft without a safety harness. Be extremely careful and break current if you work close to a voltage of 230-400V, e.g. in the lift engine room. Never disconnect a cable before you have made sure that it is not connected to any voltage. After installation the low tension cables (SELV) have to be bundled together so they cannot come near live wire or parts of the mains voltage if a connection loosens from terminal block.*

6.1 Installation of central unit

The Central unit is most easily mounted on the roof of the lift either in a lying or standing position. Ensure that is possible to connect, both to the electric system and the alarm button from the site of erection in the lift car. The central unit should not be mounted on top a lighting fitting that can raise ambient temperature and therefore shorten the lifetime of the battery. The enclosed mounting screws or other suitable screws should be used.

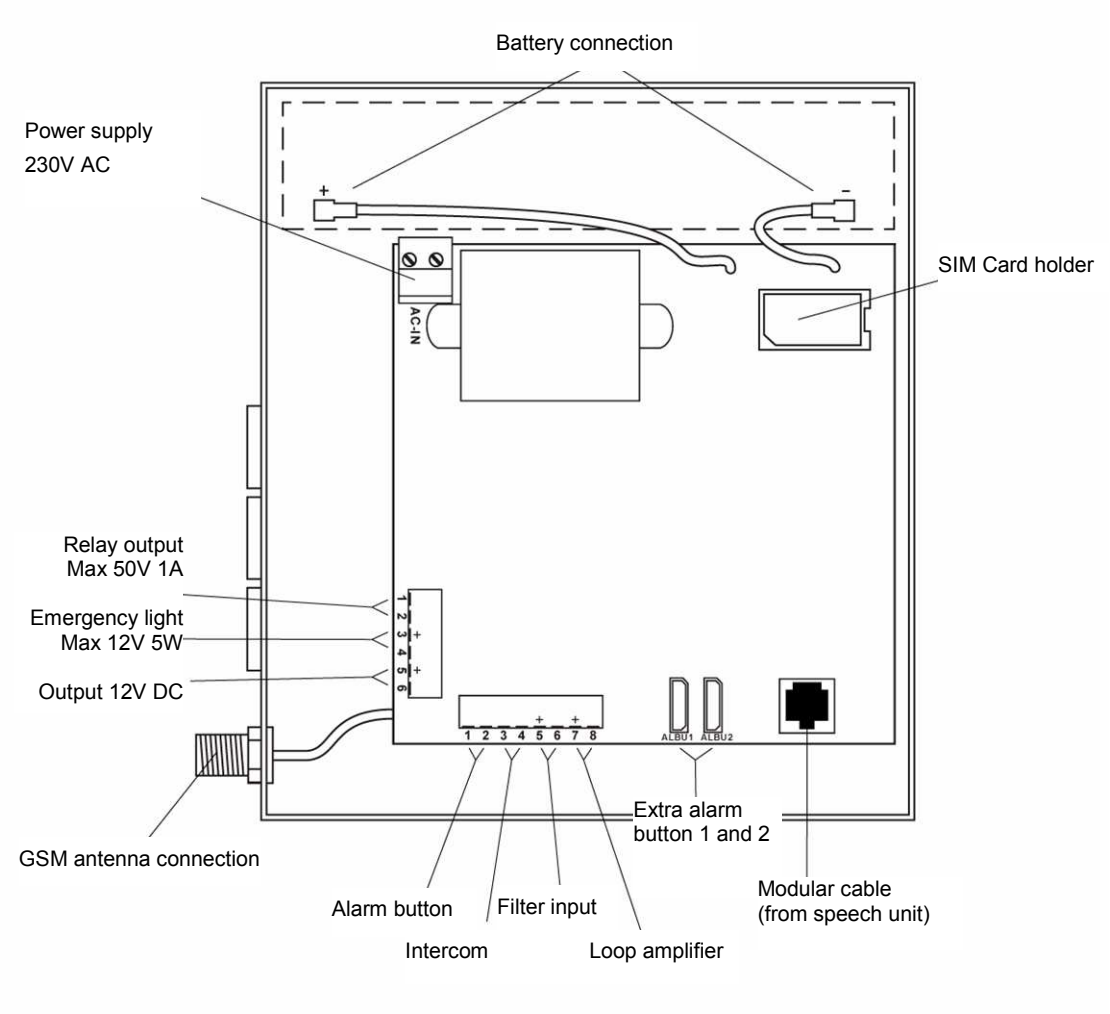


Standing installation

Lying installation

It is very important that the EC II GSM SE has the best possible GSM-signal to prevent communication disturbances. Find the best possible position before mounting of the central unit. Place a standard mobile phone in the imagined site of erection, make a speech connecting call and run the lift slowly through the whole lift shaft. If there is a disturbance or interruption of the call – choose another position and do the whole procedure again. Make sure that the same operator is used which is intended to be used by the EC II GSM SE.

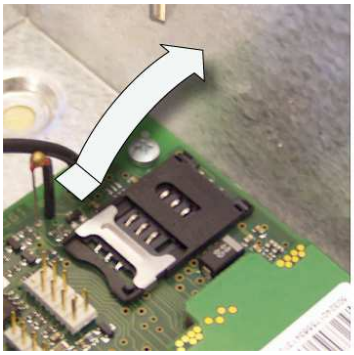
It is also possible to mount the central unit in the machinery room if no good GSM signal is available on the lift car roof. Then the modular cable between the speech unit and the central unit must be replaced by an 8 wire lift cable, preferable with twisted pairs. Cut the modular cable in the middle and connect all wires using a screw connector to the lift cable to be used.



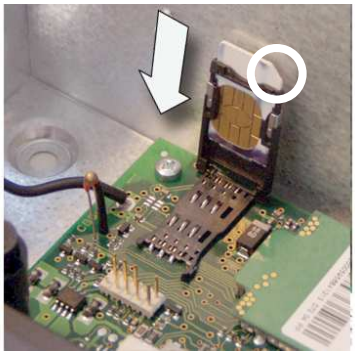
Connections in central unit

6.1.1 Installation of SIM card

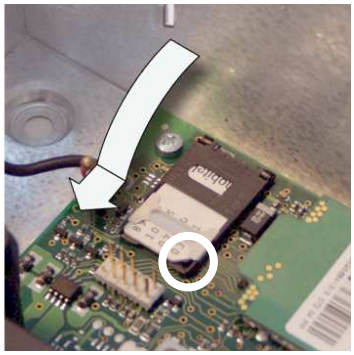
Mains voltage must **not be connected** during this stage! The SIM card is mounted in the holder in the upper right corner of the printed circuit board. Make sure that the contact surfaces are facing downwards and that the holder is closed properly after mounting. Please note that the address book in the SIM card must be empty because the address book is used as a memory during programming and existing numbers can destroy normal functionality.



1. Pull lock back and fold up



2. Place SIM card turned right side up



3. Fold down and pull lock forward

6.1.2 Connection of battery

The enclosed battery is mounted in the intended position in the enclosure of the central unit and battery terminals are connected to corresponding battery cable. For polarity – see picture in the section *Installation of central unit.*

Be sure not to mix up polarity!

Only batteries approved by Rocom GmbH of type sealed lead acid-batteries may be connected to the EC II GSM SE. Other batteries could lead to danger for the user and/or damage EC II GSM SE. Damages caused by incorrect battery types are not covered by warranty.

6.1.3 GSM antenna

The enclosed antenna is mounted in intended position in the chassis antenna contact on the external enclosure of the central unit. If there is a problem with sufficient GSM reception, improvement of the situation can possibly be achieved with another type of antenna. Contact your local distributor or Rocom GmbH for more information.

6.1.4 Connection of speech unit

One end of the enclosed modular cable is connected to socket in the central unit and the other end is connected to the speech unit.

6.1.5 Alarm button

The alarm button in the lift car can be connected to the alarm button input on the speech unit or on the central unit. Both alarm inputs are pre-programmed for breaking alarm buttons and therefore a jumper is mounted on both connectors. Only remove the jumper on the alarm button input that will be used. Note that there is a speech unit version with an integrated alarm button, see section 4.1 above.

Note that the alarm button in the lift car normally is double-breaking, i.e. made for two separate connections. One of them is usually connected to a local bell and the other one used for

the EC II GSM SE. The connections must be galvanic isolated. Contact your local distributor or Rocom GmbH for more information.

Note that the alarm button may have closing or breaking function. Breaking function is preferred and is the default setting for the EC II GSM. If the alarm button has closing function, the EC II GSM SE must be programmed to handle this, see section 8.3.3 below.

If the lift does not have a double-breaking alarm button the build-in relay output in central unit can be used to activate an external alarm signal bell. If the lifts existing alarm bell is not connected to an emergency power supply it is possible to use the 12VDC output that is connected in series with relay output. Note that the current consumption of the alarm bell must exceed the declared value for the 12VDC output. To avoid misunderstanding only one alarm button should be mounted in the lift car.

There is also a possibility to mount two extra alarm buttons (ALBU) with built-in microphones on e.g. roof of the lift or under the lift car accessible, for example, a trapped lift technician. Contact your local distributor or Rocom GmbH for more information.

6.1.6 Emergency light

It is possible to connect an emergency light to EC II GSM SE which automatically switches on when the mains power is lost. When mains returns the emergency light switches off.

Output is adapted for an emergency light on maximum 12V 5W. Use the existing emergency light or contact your local distributor or Rocom GmbH for more information.

This output is protected with fuse as protection against possible short circuit, see section 14 below.

6.1.7 Intercom

For communications between lift machine room and the lift car there is a possibility to connect an intercom phone to the central unit. Most types of phones can be used as long as they are approved for connection to the telephone network (TBR21 approval).

A connection is made automatically when the receiver is lifted and the connection is cleared when the receiver is replaced. If a speech connected lift alarm is made at the same time as the intercom is connected, the intercom is connection is broken and the lift alarm calls out as usual. The Intercom is reconnected when the alarm call is finished if the receiver is still off the hook.

If an incoming voice call is made at the same time as the intercom is in use, the intercom will be disconnected and the voice communication starts. The Intercom is reconnected when the alarm call is over if the receiver is still off the hook.

If the intercom receiver is off the hook at the same time as a speech connecting alarm call is made, the intercom is not connected until the alarm call is finished. Test alarm and battery alarm functions as usual even if intercom is in progress. Intercom is not affected if the product is in alarm mode. When the intercom is active a tone is heard in the speaker of the speech unit every 10th second and is indicated by light signals both in speech unit and in central unit. Remote programming cannot be done at the same time as the intercom is in progress.

6.1.8 Output 12V DC

This output always supplies 12V DC, even if the product is operating on battery, as long as the emergency power supply is not shut off to protect the battery against deep discharging.

The maximum load on the output is 100 mA (continuously) to not influence the battery operation time of EC II GSM SE. For shorter periods it can be on load with up to 500 mA e.g. for the external alarm bell. If the lift does not have a double-breaking alarm button this output together with the build-in relay output on central unit can be used to activate an external alarm bell, which can be connected in series with relay output and 12V DC output.

The output is protected with fuse against possible short circuit and overload, see section 14 below.

6.1.9 Relay output

There is a potential free connection on the central unit with relay function. Default the relay is activated if any of the alarm buttons is pressed down and will remain activated as long as the alarm button is activated. The relay can also be programmed to be activated remotely, see section 8.4.15 below.

The relay is not affected by the alarm button delay or if filter function is activated. The relay output is of the type normally open (NO) and may be on load with maximum 50V 1A.

This output can be used to control external devices such as door locks or to activate an alarm bell if the lift existing alarm button not is of double-breaking type. See section 6.1.8 above.

6.1.10 Filter input

To reduce the number of false alarms, it is possible to connect the EC II GSM SE to the control equipment of the lift via the built-in filter input. By letting the lift decide if lift alarm should dial out; the number of false alarms can be reduced. For this function the control equipment of the lift must be able to generate a signal that the EC II GSM SE can use. Possible additional-connected alarm buttons (ALBU) are not affected by this filtering.

As a security reason it is possible to bypass an active filter if the alarm button is pressed for more than 30 seconds.

The function is activated with a special programming sequence, see section 8 below.

6.1.11 Loop amplifier

To enable passengers with impaired hearing to communicate with alarm centre there is a possibility to connect a loop amplifier. Contact your local distributor or Rocom GmbH for information about approved loop amplifier to be used with EC II GSM SE.

The loop amplifier output on EC II GSM SE has a signal level of 50-100 mV and an internal impedance of 1 kΩ. Suitable load impedance is 10 kΩ. The output can be short circuited without causing any damage.

The loop amplifier must work during power failure. Connect it to a power supply that is working during power failures. It can be connected to the EC II GSM SE's own 12V output only if it fulfils the requirements which are described under the section 6.1.8 above.

6.2 Installation of speech unit

Select a suitable place for the speech unit. Avoid installing it in a corner or behind anything that may reflect the sound. This might lead to acoustic feedback instability between the loudspeaker and the microphone.

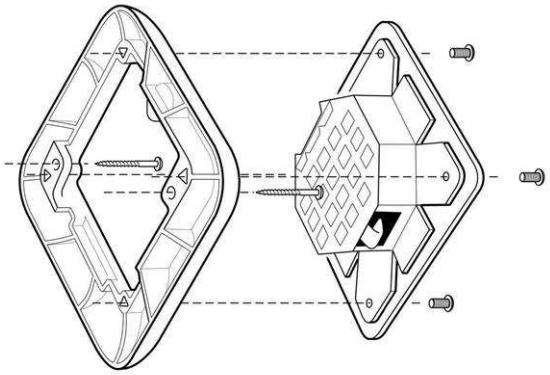
6.2.1 Adjustable sound

It is possible to adjust the sound level in the speech unit with a trim pot. The trim pot is hidden behind the small plastic protection part covering and protecting the key pad tail. Remove carefully the plastic part and use a small screw driver to increase or decrease the sound. The sound is increased by turning the trim pot counter clockwise and the sound is decreased by turning it clockwise. Normally the factory setting is enough for most types of lift cars.

Make sure that you do not saw or drill in existing cabling when you make holes!

6.2.2 Frame mounting

Mark and pre-bore the holes for the speech unit frame at suitable position according to enclosed drill template. Drill the holes for the modular cable to reach modular contact on speech unit. The modular cable cannot be led between the keyboard and the lift wall because the distance between the keyboard and the wall is too small when the speech unit is screwed into the frame. This requires the hole for the modular cable to be drilled next to those of the edges of the frame, see the enclosed drill template.



Mounting of speech unit in the enclosed frame

6.2.3 Recessed mounting

There is also a possibility to mount the speech unit without frame, so called recessed mounting. Drill a hole in the centre of the selected place and then make a hole with a 86 mm rotary hole saw or drill. See the enclosed drill template. Mark the holes for the mounting screws and pre-bore.

6.2.4 Mounting behind Car Operating Panel (COP)

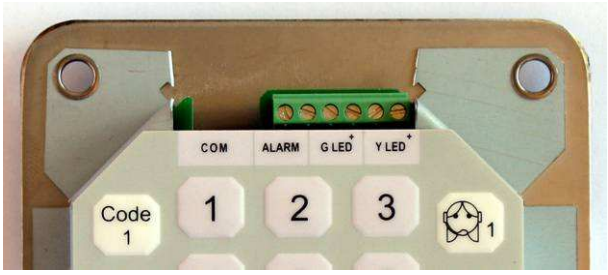
There is a special version of the speech unit which is specially designed for mounting behind a button and display plate. This alternative is only possible if there is already a prepared space for a lift phone behind the button & display plate. Since the design of the display may vary, we are not able to give exact mounting instructions here. Keep in mind that the microphone hole must be aligned with a hole in the display plate. It might become necessary to drill a new hole. For the best sound quality, the distance between the speech unit front plate and the display plate should not exceed 1 mm.

6.2.5 Mounting of ALBU version

Mounting of the speech unit version with integrated alarm button is done in the same way as described in section 6.2.2 above. The only difference is that no external alarm button must be connected, since this is already pre-wired from delivery. The alarm button is double breaking and the second circuit can for instance be used to activate an external alarm button in the lift.

6.2.6 Alarm Button connector

The alarm button in the lift car can be connected to the connector marked ALARM on the speech unit (see picture below) or to the central unit. In case it is connected to the speech unit - remove the jumper and connect the alarm button. The alarm button input is default set to breaking and if that is not the case this must be changed. See section 8.3.3 below for information about how to change this.



Connectors on Speech Unit

6.2.7 External LED connector

In case there are external pictograms available in the lift car they can be connected to the LED connectors on the speech unit marked “G LED” (green) and “Y LED” (yellow), see picture above. Make sure the polarity is not mixed up. See section 4.2.1 above for information about the technical data of the LED connectors.

6.2.8 Connector for Central Unit

One end of the enclosed modular cable is connected to socket in the central unit and the other end is connected to the speech unit input marked “COM”. See picture above.

7 Emergency power supply

EC II GSM SE has an integrated emergency power supply that ensures the product works by mains failures by connecting the built-in battery. It also allows connection of emergency light and operation of possible external equipment such as external alarm bell or similar.

The central unit is intended for fixed installation to input mains. The central unit must be connected to 230V AC and be fused with maximum 10A to the input mains. An easily accessible mains switch must be available for the input mains to the central unit. Both the input conductors must be fixed together and anchored with a cable tie 10 mm from the terminal and be well separated from the printed circuit board low voltage parts.

7.1 Battery

Only sealed lead-acid batteries approved by Rocom GmbH may be connected to EC II GSM SE. Other batteries may cause danger to the user and/or damage the EC II GSM SE. Damages caused by incorrect battery types are not included by warranty. Battery lifetime is normally 2-3 years and should be replaced after that. Warm environments will shorten the battery lifetime.

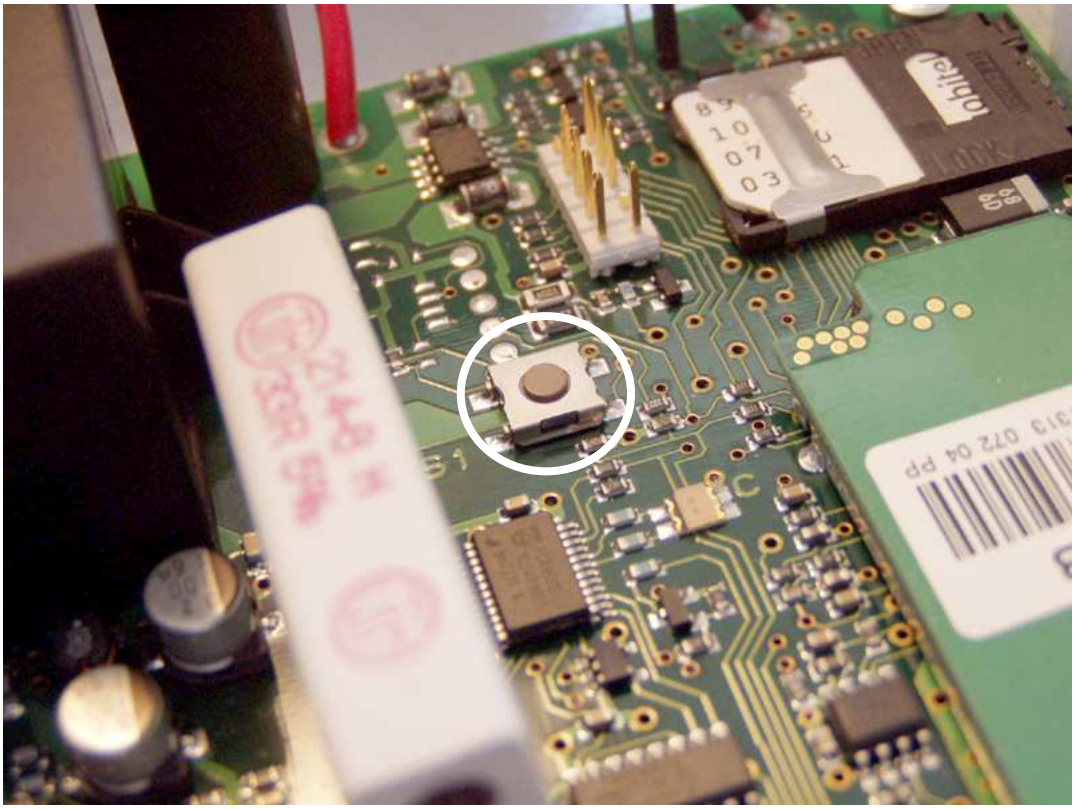
The battery in EC II GSM SE contains substances harmful to the environment, mainly lead and sulphuric acid. Therefore scrapped batteries may not be thrown away with ordinary gar-

bage but must be disposed of in a responsible way. Follow the regulations from the environmentally responsible local authorities which are valid at the time of disposal. As a rule, the same procedure may be used which are applied for the disposal of car batteries, because the EC II GSM SE battery is designed in a similar way.

The EC II GSM SE may not be used if the battery is not mounted and connected, but the battery can be replaced during operation. If battery is replaced during operation the battery alarm can be activated but the reset button S1 can reset the battery alarm. If the battery is mounted with reverse polarity the equipment will not be damaged but a battery alarm will be activated.

After battery replacement it is recommended that the reset button S1 on the printed circuit board of the central unit is used. It will recharge the new battery completely and test it.

The battery can operate the equipment for at least 60 minutes as long as the current consumption for various connected external units does not exceed the specifications.



Reset button S1

7.2 Battery charging

The built-in battery charger checks that the battery is continuously charged and an empty battery is fully charged in a maximum of 14 hours. The battery charger is temperature compensated and has a limitation of current charging to prevent damages if an empty battery is mounted.

7.3 Battery test

The capacity of the battery is tested automatically every 30th day and the test can last up to 90 minutes depending on the condition of the battery. The better the battery the shorter the test will be. If the battery voltage by the battery test sinks below a certain level a battery alarm goes out. The first battery test is made after 17 hours of operation.

No battery test is made during ongoing power failure. An ongoing battery test is interrupted immediately if a power failure occurs or if battery voltage sinks down below a certain level.

7.4 Battery alarm and reset alarm

The EC II GSM SE sends out a battery alarm to indicate that the battery is bad. The battery alarm is completely silent and an active battery alarm is indicated by a light signal on the speech unit and on the central unit.

A battery alarm will be sent out at any of following occasions:

- Battery voltage decreases a certain level at a regular battery test
- Battery is mounted with reverse polarity
- A battery cell has been short circuited
- No battery is mounted

If a battery alarm has occurred the EC II GSM SE sends a reset alarm at any of following of occasions:

- A regular battery test has been done without any problems
- The reset button S1 on the printed circuit board has been activated
- A battery reset command is sent via SMS

If a battery is replaced after the EC II GSM SE has sent a battery alarm, you should reset the battery alarm by pressing reset button S1. If this is not done, a reset alarm will be sent out at next regular valid battery test, which can take up to 30 days. Until then the product will send a new battery alarm each 3rd day as a reminder. The battery reset can also be done remotely with an SMS, see section 9.6 below.

The EC II GSM SE has a protection against deep-discharging, which protects from deep-discharging damages at mains failure. This means that if the battery voltage sinks below a certain level during battery operation the battery will be disconnected and EC II GSM SE will be shut off. The EC II GSM SE will be restarted automatically at the return of the mains.

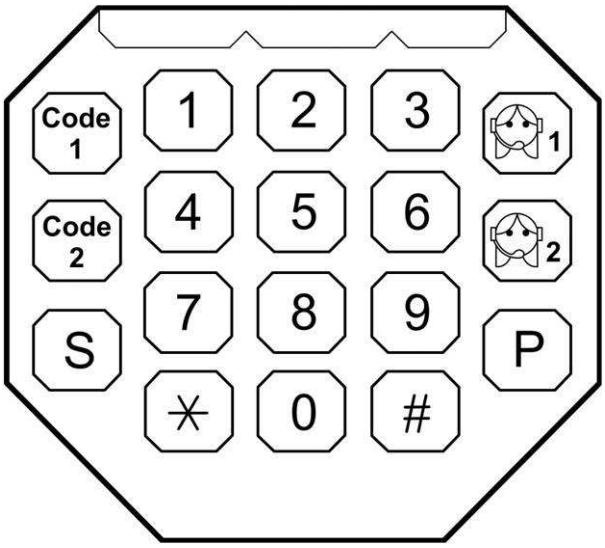
Normally the 1st. alarm receiver is used as battery alarm receiver together with the first alarm code. However, it is possible to send all battery alarms to a special battery alarm receiver. See section 8.4.5 below.

8 Programming

All programming is done with the keypad on the back of the speech unit. For practical and ergonomically reasons it is recommended that all programming is done at (e.g. at a desk) before the EC II GSM SE is mounted in the lift. The EC II GSM SE can also be programmed remotely via SMS. See section 9 below for more information.

Each time a key is pressed in programming mode a short tone is heard and after each programming sequence, there is a 4-tone for a successful programming and a 1-tone for an unsuccessful programming

All programming which is done in the EC II GSM SE is stored in the SIM card and will remain in the EC II GSM SE even after it has been disconnected from power. This means that if you change the EC II GSM SE at, for example, a repair, no new programming is needed, apart from the PIN code as long as the same SIM card as before is used.



The keys on the keyboard of the speech unit have the following functionality:

P **Programming – Starts and end of an all programming sequences.**

S **Sequence receiver – Used when programming more than 2 alarm receivers.**

Alarm receiver 1 – Phone number to alarm receiver 1

Alarm receiver 2 – Phone number to alarm receiver 2

Alarm code 1 – Used for alarm receiver 1, 3, 4, 5 and 6

Alarm code 2 – Used for alarm receiver 2

8.1 Check list before start up and programming

The following must be checked before the power is connected to the central unit!

1. A speech unit is connected to the central unit
2. An alarm button is connected to the speech unit or to the central unit. As an alternative a speech unit with integrated alarm button can be used
3. All jumpers are mounted to the non used alarm button inputs
4. The battery is mounted and both battery cables are connected to the battery
5. A SIM-card is mounted according to instructions in section 6.1.1 above

If other equipments will be used such as loop amplifier, emergency light, telephone handset for intercom, etc, they must also be connected to the central unit before power is connected.

6. Connect external power to the central unit.

When external power is connected LED A becomes green. For more information regarding the other LED´s, see section 13

8.2 Setup of programming mode

Before EC II GSM SE can be programmed it must be set to programming mode.

Press the button [P] for three seconds to enter programming mode

An active programming mode is indicated by a 4-tone from the loudspeaker of the speech unit and a flashing red/green LED both from the speech unit and central units. The flashing continues as long as EC II GSM SE is in programming mode

The programming mode is automatically disconnected after 30 seconds if no key is pressed. It is possible to manually exit the programming mode by pressing:

[P][#][P]

8.3 Standard functions which must be programmed

Below follows a description of the most frequent programming sequences which is used to program the EC II GSM SE. A number of optional functions are presented in the following section.

8.3.1 Programming of PIN code

In order to be able to connect to the GSM network the PIN code of the SIM card must be programmed.

If the SIM card has no PIN code activated this step is skipped

Programming the PIN code is done with the programming sequence:

[P][*][4][0][0][*]<PIN code>[P]

Where <PIN code> correspond to the PIN code of the SIM card.

The EC II GSM SE will be locked for about 10 seconds before the programming can continue which is indicated by sound signals. A 4-tone is heard from the loudspeaker when the programming can continue

Note that at every start-up the EC II GSM SE tries to unlock the SIM card. If an incorrect PIN code is programmed the SIM card will be locked after 3 start up attempts. Then the PUK code is needed to unlock the SIM card, see more under section 8.4.9 below.

8.3.2 Reset to factory setting

If the EC II GSM SE is moved to another building or if the alarm numbers are changed or if the unit has been incorrectly programmed; the best thing might be to simply delete all old settings. The PIN code is not deleted. Reset all setting in EC II GSM SE with:

P ✳ 9 9 0 P

8.3.3 Closing or breaking alarm button

Breaking function (NC) is pre-programmed for the alarm button input in the central unit as well as in the speech unit. If an alarm button of closing type (NO) is connected FältCom GSM SE must be programmed for this.

Program the following when an alarm button of closing type (NO) is connected to the **central unit** alarm button input:

P ✳ 0 2 0 P

Reset the alarm button in the **central unit** to breaking function (NC) with:

P # 0 2 0 P

Program the following when an alarm button of closing type (NO) is connected to the **speech unit** alarm button input:

P ✳ 0 2 1 P

Reset the alarm button in the **speech unit** to breaking function (NC) with:

P # 0 2 1 P

8.3.4 Alarm telephone number and alarm code

For speech connection with an alarm centre, the phone numbers and alarm code specified by that alarm centre must be used. The alarm code inform the alarm centre which lift and which building the alarm comes from.

Note that it is important that several numbers are programmed if it is not an alarm centre with constant manning!

The EC II GSM SE is always programmed in the same way, independent if it will call an alarm central or a telephone/mobile. **An alarm code must always be programmed** independent if the EC II GSM SE should call an alarm central or a telephone.

Enter phone number for alarm receiver 1:

P 1 <Phone number, max 20 digits> P

Enter alarm code for alarm receiver 1:

P Code 1 <Alarm code, max 10 digits> P

Enter phone number for alarm receiver 2:

P 2 <Phone number, max 20 digits> P

Enter alarm code for alarm receiver 2:

P Code 2 <Alarm code, max 10 digits> P

For alarm receivers 3–6 use the keys:

S 3 S, S 4 S, S 5 S and S 6 S instead of 2 under item 4. These numbers automatically have the same alarm code as alarm receiver 1.

Note! Do not forget to test the function by making a test alarm!

8.3.5 Test alarm to test the installation

After completed the installation, the EC II GSM SE must be tested with a test alarm. Press the alarm button in the lift car and check that the alarm reaches alarm receiver 1.

To test that the alarm also reaches secondary receivers use the keypad on the back of the speech unit. Check that the alarm reaches alarm receiver 2 by pressing programming mode:

P 2 # P

EC II GSM SE immediately leaves the programming mode and calls alarm receiver 2.

If there are more alarm receivers, test them by substituting 2 in the sequence above by

S 3 S, S 4 S, S 5 S and S 6 S.

8.4 Optional functions that may be programmed

Below follows a description of all optional programming sequences, which can be used with EC II GSM SE.

8.4.1 Automatic test alarm

By activating the function automatic test alarm EC II GSM SE will call an alarm receiver with certain interval to check the connection. Note the function automatic test alarm may only be programmed if the function is ordered by the alarm receiver.

Select the required test interval between 1 to 9 days:

P * 0 8 0 * <1–9> P

Enter telephone number for the test alarm receiver with:

P * 3 0 0 * <Phone number, max 20 digits> P

Enter alarm code for the test alarm:

P * 3 0 1 * <Alarm code, max 10 digits> P

The first regular test alarm calls 5 minutes after completion of programming mode. After that the next test alarm calls after 10 hours and then next test alarm calls out after programmed test interval. The delay in 10 hours is there to move test alarm calls to the evening when the tariff usually is lower than daytime.

Test the test alarm function, by in programming mode enter:

P ✳ 3 0 0 P

Programming mode is completed automatically and the EC II GSM SE sends immediately to the test alarm receiver. Note that the test alarm is not speech connected. To check if the test alarm has reached the receiver you must contact the alarm centre.

Push following sequence to disable automatically test alarm:

P # 3 0 0 P

The test alarm is sent out even if battery alarm is active and during battery operation. If a test alarm fails, next the attempt will be made after 10 minutes. Totally 10 attempts will be made.

8.4.2 Change delay time for alarm button

You can change the time that the alarm button must be pressed down before an alarm is activated. The default time is 5 seconds, but this time may be changed between 1 and 30 seconds. Note that the selected time must always be shorter than the time posted next to the alarm button in the lift car. The delay is selected with:

P ✳ 0 5 3 ✳ <Time in seconds 1-30> P

The time delay does not include other connected alarm buttons (ALBU 1 and ALBU 2) but for them the alarm calls out immediately at activation.

Note that it is only the delay for activation, which is programmed. The actual speech connection will need a longer time to establish

8.4.3 Answer function

It is possible to call EC II GSM SE to talk with the person who is in the lift. Normally the function is activated but the function can be disabled with:

P # 1 4 0 P

The function can be activated with:

P ✳ 1 4 0 P

8.4.4 Active and passive alarm mode

If alarm mode function is programmed it means the EC II GSM SE can only receive incoming calls when the alarm mode is active. To activate the alarm mode the following conditions must be fulfilled:

- Alarm mode function is programmed
- A lift alarm has been called out

The active alarm mode can only be disabled by the phone, which receives the lift alarm, or from the phone, which calls to EC II GSM SE. See section 10 or 11 below for more information.

Alarm mode function is programmed with:

P ✳ 1 4 1 P

Alarm mode function is disabled with:

P # 1 4 1 P

An active alarm mode is indicated by light signals both in speech unit and in central unit. The active alarm mode is automatically disconnected after 6 hours but will be extended up to 6 hours if a new speech connecting alarm is made or if a call is made to EC II GSM SE during this interval.

8.4.5 Battery alarm receiver

In normal cases the 1st. alarm receiver is used as battery alarm receiver together with alarm code 1. It is possible to send all battery alarms to a dedicated battery alarm receiver with

P ✳ 3 1 0 ✳ <Phone number, max 20 digits> P

Enter alarm code for battery alarm with:

P ✳ 3 1 1 ✳ <Alarm code, max 10 digits> P

Test the battery alarm receiver function in programming mode by enter:

P ✳ 3 1 0 P

After completed programming mode the EC II GSM SE immediately call the battery alarm receiver. This test alarm is a speech connecting alarm.

Push following sequence to stop sending battery alarms to a dedicated battery alarm receiver.

P # 3 1 0 P

8.4.6 Simple phone acknowledgement

When the EC II GSM SE sends an alarm to a phone or a mobile an acknowledgement must be made on the receiving phone. If there is no acknowledgement, EC II GSM SE will call the next programmed alarm receiver after thirty seconds. See section 10.2 below.

Simple phone acknowledgement means that alarm receiver can push on any of the buttons 0-9 to acknowledge the call. Disconnection of call is made by pushing the button ✳ or by replacing the receiver. The call is extended 180 seconds with any of the buttons 0-9. Manual speech switchover does not work. The function is activated with:

P ✳ 3 2 0 P

The function is disabled with:

P # 3 2 0 P

8.4.7 Disconnection of acknowledgement

It is possible to completely disconnect the acknowledgement function. It means that receiving phone only have to lift the receiver. Disconnection will be made when the receiving phone pushes ⊛ or replaces the receiver. Maximum conversation time is 180 seconds and cannot be extended. Manual speech switchover does not work. Function is activated with:

P ⊛ 3 2 1 P

The function is disabled with:

P # 3 2 0 P

8.4.8 Change of PIN code on SIM card

Change PIN code on SIM card with the following programming sequence:

P ⊛ 4 1 0 ⊛ <old PIN code> ⊛ <new PIN code> ⊛ <new PIN code> P

8.4.9 Unlock the SIM card

If wrong PIN code is entered, the SIM card will lock after three faulty trials. EC II GSM SE will make an attempt each time it is connected to mains or when a new PIN code is programmed. To be able to unlock the SIM card you must have access to the SIM cards PUK code. The PUK code of the SIM card is stated in the documents from the GSM subscription. The SIM card is unlocked with following programming sequence:

P ⊛ 4 2 0 ⊛ <PUK code> ⊛ <new PIN code> ⊛ <new PIN code> P

8.4.10 Filter input

To reduce the number of false alarms there is the possibility to connect EC II GSM SE to the control equipment of the lift via the built-in filter input. By letting the lift decide if lift alarm should dial out you can reduce the number of false alarms. In order to activate this it is necessary for the control equipment of the lift to be able to generate a signal which EC II GSM SE can use. Check carefully in the documentation of the lift. If there are any ALBU connected they are not influenced by this filtering.

It is possible to select two different types of activation, active high and active low. A high signal is defined as > 4V DC and a low signal is defined as < 3V DC. Max input voltage is 20V DC. If for example active low is programmed and a 12V DC signal from the control system of the lift is connected to the filter input, the EC II GSM SE will filter out all alarm attempts from the alarm button. If the lift stops because of an error and the control equipment of the lift makes the signal to the filter input to be low the next alarm attempt will result in an alarm call.

Activation of filter input as active high is done with:

P ⊛ 5 0 0 P

Activation of filter input as active low is done with:

P ⊛ 5 0 1 P

Filter input is disabled with:

P # 5 0 0 P

8.4.11 Programmable alarm type

EC II GSM SE has a number of pre-defined alarm types for different types of alarms. The following alarm types are used:

Alarm type	Decimal	Hexadecimal
• Lift alarm	10d	0Ah
• Battery alarm	17d	11h
• Reset of battery	12d	0Ch
• Test alarm	26d	1Ah
• End-of-alarm	28d	1Ch

If using one of the available alarm button inputs to generate a general technical alarm from the lift the alarm type for that input must be changed from the default 10d. The alarm type to be used for a general technical alarm depends on the alarm receiver. Please check with the alarm central which alarm type to be used. See also section 5.2.1.10 above for more information. There are also certain types of automatically alarm receivers, which cannot handle incoming lift alarms with alarm type 10d. With the following programming sequence the alarm type in the **central unit** can be changed:

P ✳ 6 0 0 ✳ <Alarm type> P

The alarm type shall always be entered decimal and with two digits, 00-99. Note that also ALBU 1 and ALBU 2 will use this alarm type.

Reset to original alarm type 10d for the **central unit** with:

P # 6 0 0 P

To change the alarm type for the alarm button in the **speech unit** the following programming sequence is used:

P ✳ 6 0 1 ✳ <Alarm type> P

ALBU 1 and ALBU 2 are not affected by this programming sequence. The alarm type shall always be entered decimal and with two digits, 00-99.

Reset to original alarm type (10d) for the **speech unit** with:

P # 6 0 1 P

8.4.12 Change of security code

To be able to remotely program EC II GSM SE you must know the security code of EC II GSM SE. At delivery the code is pre-set to 1111 but can be altered with the following sequence:

P ✳ 9 0 0 ✳ <old code> ✳ <new code> ✳ <new code> P

where <old code> and <new code> correspond to the old respective the new four-figured security code.

8.4.13 Change of alarm flashing sequence

When any of the alarm buttons has been activated and an alarm is registered by the lift phone, LED C in the Central Unit and the left LED in the Speech Unit become yellow. When

the alarm is acknowledged LED C LED´s becomes green. In the Speech Unit the yellow LED is switched off and a second LED to the right becomes green. This flashing sequence is according to EN81:70.

There is an option to change to a flashing sequence in the Speech Unit which indicates a registered alarm using only the right LED. It first starts to flash with green light and when the alarm is acknowledged it becomes fixed green. This is done with the following programming sequence:

P # 5 1 0 P

Return to the yellow/green sequence by programming:

P * 5 1 0 P

8.4.14 Stop sending battery alarm

If you by some reason do not want battery alarm to be called out this can be done by entering the following programming sequence:

P # 3 3 0 P

Battery alarms are again allowed by programming:

P * 3 3 0 P

Note that battery alarm always should be allowed to be called out since the product does not work in case of power failure if the battery is damaged or not mounted. Even if the product is not allowed to call out battery alarm the LED will still indicate any eventual battery alarm.

8.4.15 Relay control

Default the relay in the central unit is activated if any of the alarm buttons are activated. It is possible to remotely activate the relay for 5 seconds by pressing **DTMF 9** on the receiving telephone. To remotely control the relay the following programming sequence is used:

P * 6 3 0 P

To return to controlling the relay when activating any of the alarm buttons, program the following:

P # 6 3 0 P

8.4.16 End-of-alarm

Note that an End-of-alarm can be generated with any of the following methods:

1. Use the magnetic switch hidden under the front plate. See section 8.4.17 below.
2. Use one of the two alarm button inputs and program the correct alarm type. See section 8.4.11 above
3. Use the programming sequence described below

To inform the rescue service that the alarm has been dealt with and no more passengers are trapped in the lift it is possible send a message to the alarm central. The alarm is initiated when programming the following programming sequence:

P * 6 1 0 P

Programming mode is automatically disconnected and the alarm is sent immediately. The alarm is speech connecting. The alarm type is 28d but can be changed with the following programming sequence:

P ✳ 6 1 0 ✳ <Alarm type> P

The alarm type shall always be entered decimal and with two digits, 00-99. Note that this alarm type is also used when the reed switch is activated. Default alarm type can be set with:

P # 6 1 0 P

8.4.17 Magnetic switch

There is a hidden magnetic switch under the front plate, see pictures below.

Position of magnetic switch

It is activated with a strong magnet and at activation an end-of-alarm call is automatically made. Note that it is only possible to use this functionality on speech units with front plates of stainless steel. If the COP version is mounted behind a lift wall it is normally not possible to activate the switch.

Deactivate the function of the magnetic switch with:

P # 6 2 0 P

Activate the magnetic switch with the following programming sequence:

P ✳ 6 2 0 P

At activation a speech connected alarm is automatically made using the alarm type 28d. The alarm type can be changed with the following programming sequence:

P ✳ 6 1 0 ✳ <Alarm type> P

Note that this alarm type is also used for the end-of-alarm function described under section 8.4.16 above.

8.4.18 Disabling of “alive” flash in speech unit

When the lift phone is running and at rest the green LED in the speech unit is slowly flashing to indicate that everything is in order. When connecting an external pictogram to the LED out-

put connectors on the speech unit this might be disturbing and therefore it is possible to switch of. This is done with the programming sequence:

P # 5 1 1 P

Return to the normal flashing sequence by programming:

P * 5 1 1 P

Note that switching the green LED flash off will only affect the LED in the speech unit, not the green LED in the central unit. Read more about the LED under section 13 below

8.4.19 Change of communication protocol

Default the CPC protocol is used for communication between the lift phone and an automatic alarm central. This is possible to change to the less common P100 protocol with the following programming sequence:

P * 0 6 0 P

Note that all alarms types are affected by the change of protocol such as test alarms and battery alarms. Switch back to the CPC protocol with the programming sequence:

P # 0 6 0 P

9 SMS functionality

It is possible to use SMS as a tool for checking and changing the programming of the EC II GSM SE. SMS can also be used for monitoring the current status of the unit, checking the signal strength and resetting an active battery alarm. If desired, a SMS can also be sent together with a lift alarm. Note that some of the functions are easy to understand and use but others are more complicated and mainly used for advanced service purposes.

9.1 Basic instructions to send an SMS

The SMS to the lift phone must always begin with the four digit security code

No other text is allowed on the same line as the security code. All other text must be on the second line of the SMS. The programming is not case sensitive. Normally a new line is achieved in the mobile phone text editor with the symbol ↵

The status of the lift phone is sent back with an SMS. Read more about the security code under section 8.4.12 above.

9.2 Retrieving the telephone number

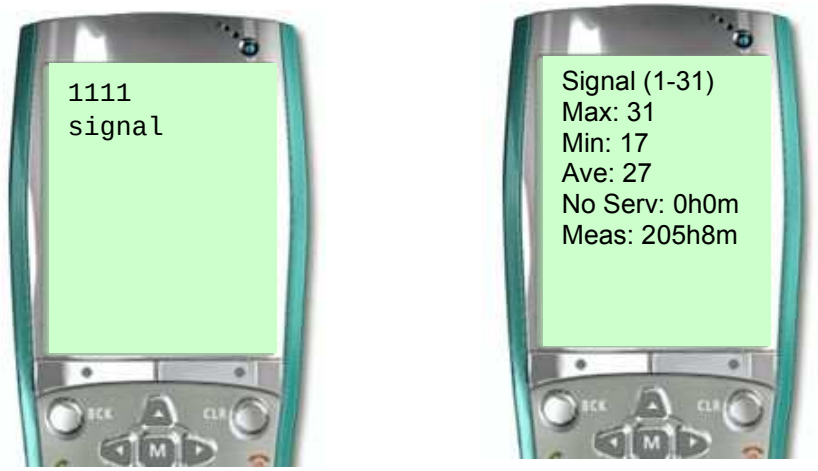
To be able to program EC II GSM SE via SMS one must have access to the telephone number. If that is not the case it is possible to find out by in programming mode entering the following sequence:

P ✳ 9 1 0 ✳ <Telephone number> P

After completed programming mode the EC II GSM SE immediately will send the current configuration as an SMS (according to table 1 below) to the programmed telephone number and at the same time it will inform about the telephone number to the lift phone.

9.3 Checking the signal strength

It is possible to have information about the quality of the GSM signal for an installed lift phone by sending an SMS according to Picture 1 below.



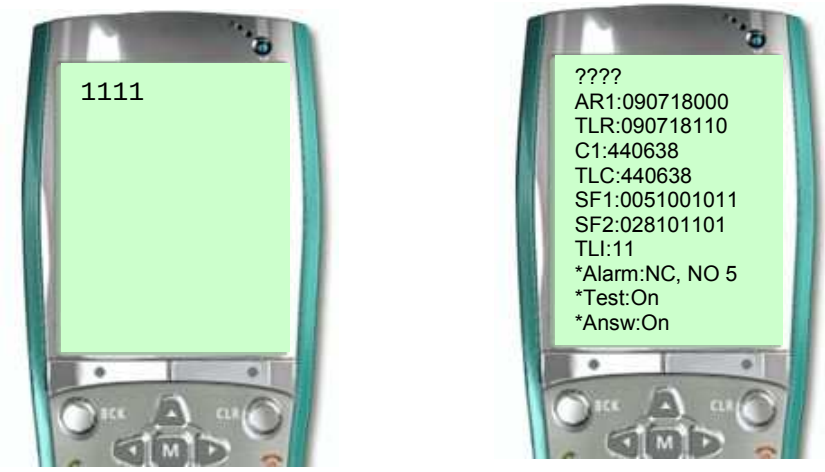
Picture 1 *SMS to lift phone* *SMS from lift phone*

Note that in this example the security code is **1111**. The received SMS should be translated as follows: The signal strength can vary between 1-31 and the max and min signal for this lift

phone has been 31 and 17 respectively. The average signal has been 27, the GSM service has been working all time (No Serv: 0h0m) during the measuring time of 205 hours and 8 minutes. Every time the lift phone is restarted the log is erased.

9.4 Checking and/or programming

By sending an SMS to the lift phone it is possible to check the current settings and also change parameters. The lift phone answers by returning an SMS with information about the current settings. See Picture 2 below for a typical example.



Picture 2 *SMS to lift phone* *SMS from lift phone*

By security reasons the security code in the returning SMS from the lift phone is replaced with **'????'.**

Please note the following: All lines starting with a '*' is treated as a comment and will be ignored when programming. Every parameter is followed by ':' as separator before the parameter value. An SMS may not be longer than 160 characters. If not all information fits in one single SMS the programming may be split in several SMS. Every SMS must start with the security code.

It is now possible to change and add telephone numbers, codes and other parameters and the return the SMS to the lift phone. For more information and explanations of the different parameters, see Table 1 below.

Always remember to replace the '????' with the correct security code before the SMS is returned to the EC II GSM SE.

If the new programming is accepted a SMS is returned with the new configuration.

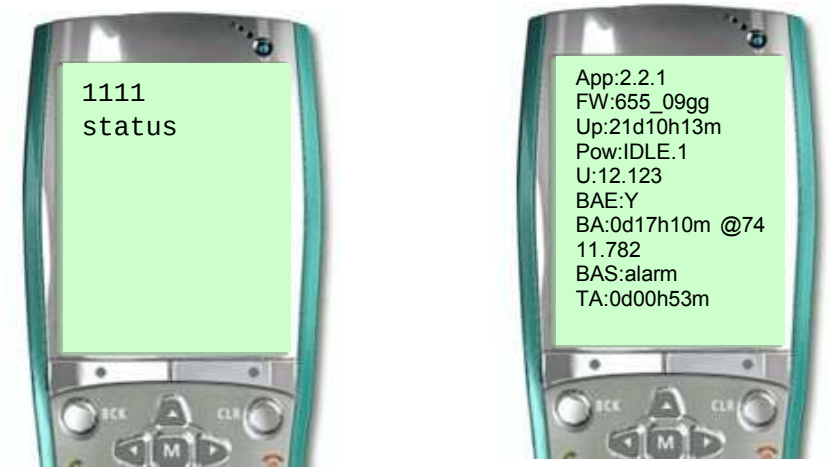
Parameter	Description
AR1:<Phone No>	First alarm receiver
AR2:<Phone No>	Second alarm receiver
S3:<Phone No>	Sequence receiver S3
S4:<Phone No>	Sequence receiver S4
S5:<Phone No>	Sequence receiver S5
S6:<Phone No>	Sequence receiver S6
C1:<Code>	Primary alarm code
C2:<Code>	Secondary alarm code

TLR:<Phone No>	Test alarm receiver
TLC:<Code>	Test alarm code
TLI:<AB>	Test alarm mode A: 0 = test alarm off, 1 = test alarm on B: 1-9 = test alarm interval (days)
TCR:<Phone No>	Technical alarm receiver - battery alarms
TCC:<Code>	Technical alarm code - battery alarms
SF1:<ABBCDEFFGH>	Special Functions 1 where ABBCDEFFGH is the following: A: 0 = NC alarm button of central unit 1 = NO alarm button of central unit BB: 00-30 = alarm button delay in seconds C: 0 = do not answer incoming calls 1 = always answer 2 = only answer after an alarm D: 0 = alarm acknowledge on 1 = simple alarm acknowledge 2 = alarm acknowledge off E: 0 = alarm filter input off 1 = alarm filter input active high 2 = alarm filter input active low FF: 00-99 = alarm type for central unit alarm input, ALBU1 & ALBU2 G: 0 = traditional flash sequence for LED in speech unit and LED C 1 = flash sequence according to EN81:70 H: 0 = battery alarms are not dialed out 1 = battery alarms are dialed out
SF2:<IJJKKLMNO>	Special Functions 2 where IJJKKLMNO is the following: I: 0 = Relay activated by alarm button 1 = Relay remotely controlled JJ: 00-99 alarm type for End-of-Alarm KK: 00-99 alarm type for speech unit alarm input L: 0 = NC alarm button of speech unit 1 = NO alarm button of speech unit M: 0 = Magnetic switch not active 1 = Magnetic switch active N: 0 = CPC protocol 1 = P100 protocol O: 0 = No alive flash in speech unit 1 = Alive flash in speech unit
*<comment>	Free-text comment

Table 1

9.5 Checking the status of battery and test alarm

With a SMS it is possible to have important information about the product status according to Picture 3 below. Every time the lift phone is restarted the status information is reset, except the information about the software and if battery alarms are allowed to be called out or not. That information is stored in the SIM card and remains there also after a restart.



Picture 3 *SMS to lift phone* *SMS from lift phone*

For detailed information and an explanation of the different parameters, see Table 2 below.

The returned SMS in Picture 3 above should be read as follows:

The software application version is 2.2.1 and the firmware version is 655_09gg. It has been up and running for 21 days, 10 hours and 13 minutes. The battery is on stand-by charge and the current voltage is 12.123V. Battery alarms are allowed to be called out and a battery alarm was sent 17 hours and 10 minutes ago. The battery alarm occurred 74 minutes in the battery test at a voltage of 11.782V. A battery alarm is active. Latest test alarm was sent 53 minutes ago.

Parameter	**Description**
App:<version>	Application Version for the application in use
FW:<version>	Firmware Version for the firmware in use
Up:<dd:hh:mm>	Uptime Total uptime
Pow:<XXXX>	Power Power status, where XXXX can be any of the following: START: Startup mode IDLE: Stand by charge TEST: Battery test CHARGE: Forced charge BATTERY: Runs on battery
U:<voltage>	Current battery voltage
BAE:<Y/N>	Battery Alarms Enabled

	Indicates if battery alarms are allowed to be called <Y> out or not allowed <N>
BA:<-/dd:hh:mm @ mm V>	Battery Alarm If no battery alarm has occurred only a ”-” is shown. If a battery alarm has occurred it also shows how long time ago it happened, how far in the test it happened and at what level.
BAS:<-/alarm>	Battery Alarm Status Indicated if a battery alarm is active <alarm> or not <->
TA:<-/dd:hh:mm>	Test Alarm If no test alarm has been called out only a ”-” is showed. If a test alarm is sent it shows how long time ago it happened.

Table 2

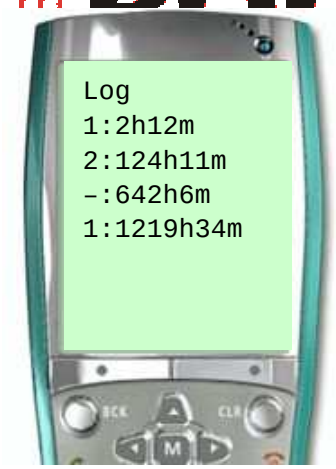
9.6 Resetting an active battery alarm

With an SMS according to Picture 4 below it is possible to reset an active battery alarm without pressing the switch S1. Note that this is exactly the same thing as pressing S1 on site. The recharge cycle will be restarted which means that a forced charged of the battery is started follow by a rest and then an ordinary battery test is done.

Picture 4 SMS to lift phone

9.7 Checking the alarm log

The log gives information about how long time has elapsed since an alarm attempt from the lift car alarm button was made. The alarm attempts are logged independent if the alarm call was acknowledged by the alarm central or not, or if the GSM coverage was bad. The 10 latest alarms are saved in the log and the log will tell if the alarm was acknowledged and how many attempts that were needed. Every time the lift phone is restarted the log is erased. The log is accessed by sending an SMS to the lift phone. See Picture 5 below for a SMS question and a typical reply.



Picture 5 *SMS to lift phone* *SMS from lift phone*

The second line in the replying SMS row says that the most recent alarm was made 2 hours and 12 minutes ago and needed 1 callout attempt. If no acknowledgement is made (10 callout attempts are done) this is illustrated with a "–".

9.8 Sending an SMS when an alarm is trigged

When an alarm is trigged an SMS can be sent to a predefined mobile phone. The SMS will be sent after the alarm call is finished and inform about the alarm type, alarm code and a message which normally is the installation address. Note that only one SMS per alarm attempt is made. There are three different alternatives available:

1. No SMS are sent when an alarm is trigged. This is the default setting
2. An SMS is sent and an alarm call is made when an alarm is trigged
3. Only an SMS is sent when an alarm is trigged

For an SMS to be sent, follow the three steps below:

1. You **must** decide which types of alarm that will trigger an SMS
2. You **must** program an Alarm Message Receiver (AMR)
3. You **may** enter an alarm message (MSG), normally the installation address, from where the alarm is sent. If you don't do this only the telephone number and the alarm code of the sending phone will be displayed

All programming can be done using the keypad on the speech unit, except for the alarm message (MSG), which must be programmed with an SMS. To make the complete programming with a single SMS, see Picture 8 below.

The Alarm Message Receiver (AMR) is programmed with the following programming sequence:

P ✳ 3 4 0 ✳ <Phone number, max 20 digits> P

The SMS functionality for each alarm type is activated with the following programming sequences:

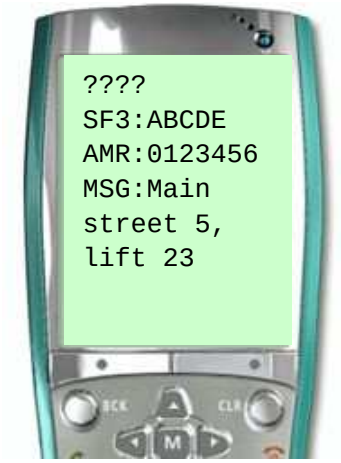
P ✳ 3 4 1 ✳ < A > P	Alarm button in central unit
P ✳ 3 4 2 ✳ < B > P	Alarm button in speech unit
P ✳ 3 4 3 ✳ < C> P	Test alarm

P ✳ 3 4 4 ✳ < D > P Battery alarm and reset alarm

P ✳ 3 4 5 ✳ < E > P End-of-alarm

Where “A” to “E” can be any of the following:
0 = only call (default)
1 = call and SMS
2 = only SMS

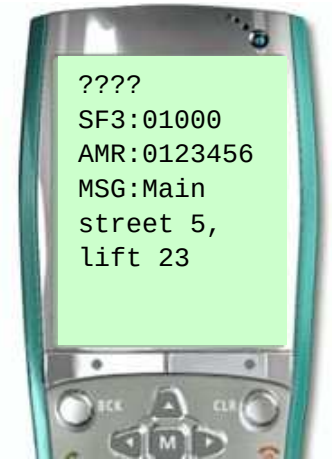
To program the alarm message (MSG), normally the installation address, you always must send an SMS:



Picture 6 *SMS to lift phone* *SMS from lift phone*

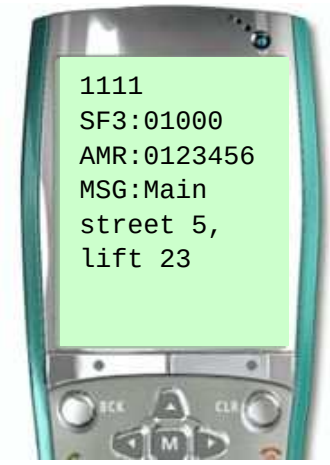
The alarm message can max be 80 letters long. The letter “A” to “E” after SF3 in the SMS answer explains which type of alarms that have the SMS functionality activated. See above for more information.

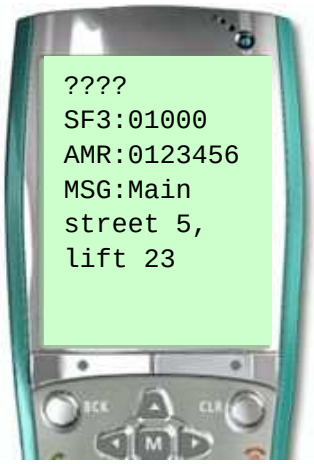
To check the complete configuration you send the following SMS to the lift phone:



Picture 7 *SMS to lift phone* *SMS from lift phone*

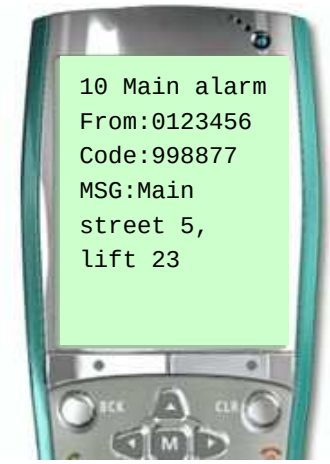
You may also make the entire programming with a single SMS as in Picture 8 below:





Picture 8 *SMS to lift phone* *SMS from lift phone*

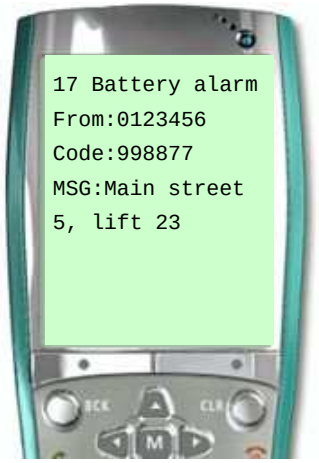
When the alarm button in the Speech Unit is pushed and an alarm is activated the following SMS will be sent to the programmed AMR:



Picture 9 *SMS from lift phone*

Please note that the information about the lift phone telephone number, the “From:” parameter in Picture 9 above, is not always accessible by default. On some SIM cards this number must be entered manually. Mount the SIM card in a standard mobile telephone, enter the phone book and search for the correct settings. If this is not possible the telephone number of the EC II GSM SE is retried by looking at the SMS itself, if the service Caller ID is activate on the receiving mobile telephone.

When a battery alarm is sent from the lift phone the SMS may look like the in Picture 10 below:



Picture 10 *SMS from lift phone*

The following sequences can be seen on the first line in the SMS:

“10 Main alarm“	The alarm button is activated
“17 Battery alarm”	A battery alarm is active
“12 Reset alarm“	The battery alarm is reset
“26 Test alarm”	A test alarm is sent
“28 End of alarm”	A end of alarm is sent

The text string is hard coded and cannot be changed but the initial digits may be different for “Main alarm” and “End of alarm” since these alarm types can be set manually, see section 8.4.11 and 8.4.16 above.

9.9 Remote reset of the lift phone

In some cases a complete reset of the lift phone is desired. This is achieved by sending a reset message to the lift phone. See Picture 11 below for a description of how the SMS looks like.

Please note that there will be no answer from the lift phone after sending a remote reset. You may check that the lift phone has restarted correctly by sending a status SMS, as described under section 9.5 above.

Picture 11 *SMS to lift phone*

10 Alarm reception

If an alarm is sent out but not acknowledged within 30 seconds the call is disconnected and the next programmed phone number called after 10 seconds. Totally 10 attempts are made and if all fail the EC II GSM SE returns to standby. The EC II GSM SE calls the 1st. alarm receiver and then the next programmed alarm phone number. If, for example, three alarm numbers are programmed, the calling sequence 1-2-3-1-2-3-1-2-3-1 will be made. Is there only one alarm phone number programmed, all attempts are made to that phone number.

If an alarm button is pushed that has higher alarm priority during the calling sequence, The EC II GSM SE will start again with calling attempts. Alarm button priority is in descending order: Alarm button in speech unit, alarm button in central unit, ALBU 1 and ALBU 2.

10.1 Alarms sent to a automatic alarm central

It is recommended that all alarms from EC II GSM SE should be sent to a 24-7 manned alarm centre since the identification is done automatically using the alarm code. In exceptional case it is possible to let a phone or mobile to be an alarm receiver. With alarms to a phone it is not possible to identify EC II GSM SE with the programmed alarm code. Instead, for example, caller-ID can be used to identify the calling EC II GSM SE, if the GSM operator offers that service.

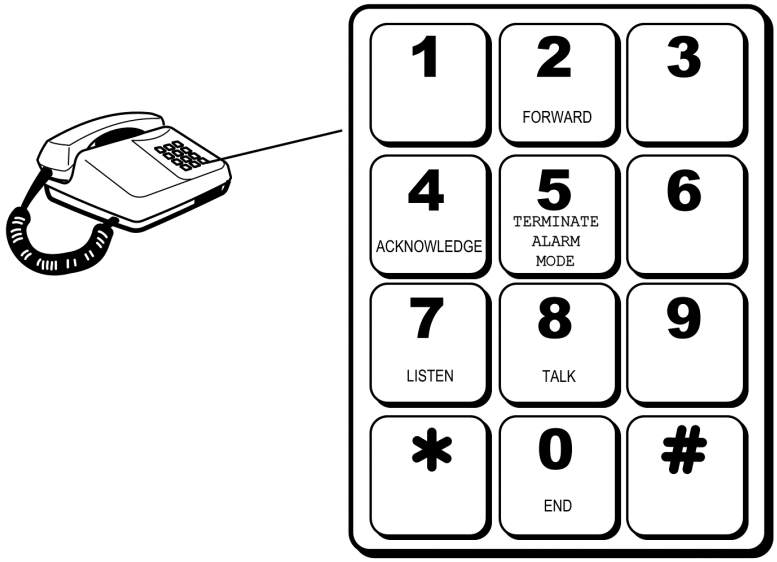
The person who makes an alarm from the lift could be in a panic situation and you cannot assume that the person can tell you where he or she is. The person can also talk a foreign language or having speech difficulties. Because of this we recommend always letting lift alarms go to automatic alarm receivers, which with help of the programmed alarm code can identify the lift.

10.2 Alarms sent to a telephone

All tone dialing telephones can work as alarm receiver. The keypad of the telephone is used to control alarm reception and to acknowledge the alarm.

Note that phones, which are used for alarm reception, should be marked so that all people are aware of the possibility of alarm calls. Likewise the special functions, which exist for certain buttons on the phone, should be marked.

At an alarm situation it is not certain that a separate instruction is available. The most important button to learn is 4 to acknowledge the alarm and set up the call.



An incoming alarm call from EC II GSM SE gives a tone chirp every 3rd second when the receiver is lifted. It is important that everybody is aware of the opportunity with alarm calls.

Note that all alarm receivers should practice the alarm handling procedure!

10.2.1 Acknowledging an alarm

Acknowledge the alarm with **4, ACKNOWLEDGE**. A voice communication call is then set up; speech exchange is automatic, as in a normal telephone call.

The call will be disconnected automatically three minutes after the last key pressing. With thirty seconds to disconnection, a warning tone will be heard. To prolong the call, press **4, ACKNOWLEDGE**.

End the alarm call by pressing **0, END.** If the alarm is ended with time disconnection or lost contact and either *Simple phone acknowledge* (section 8.4.6) or *Disconnection of acknowledgement* (section 8.4.7) is programmed the EC II GSM SE will make a new alarm call to the same alarm receiver. Please note that this will only happen when alarms are sent to a standard telephone. When sending alarms to automatic alarm central no further calls will be made after the alarm has been acknowledged.

10.2.2 Speech exchange

If the automatic speech exchange is not satisfactory, you can change to manual speech exchange **8, TALK** and **7, LISTEN**. Revert to automatic speech exchange by pressing **4, ACKNOWLEDGE**.

10.2.3 Termination of active alarm mode

If the function *Alarm mode* (see section 8.4.4 above) is programmed and the product is in active alarm mode, you can finish it by pressing the key **5, TERMINATE ALARM MODE**. The call is automatically disconnected.

10.2.4 Forwarding a call

If you want to forward the alarm to the next alarm receiver, press **2, FORWARD**. The alarm is then closed, and the lift phone will call the next programmed alarm receiver.

11 Calling the EC II GSM SE

If answering function is activated, or if alarm mode function is programmed, and EC II GSM SE is in active alarm mode, it is possible make a call to EC II GSM SE from a tone dialing phone or a mobile phone according to the following:

1. Dial the number to the EC II GSM SE.
2. EC II GSM SE answers after the first signal with a 4-tone.
3. Press 4 to activate voice connection, connect duplex and prolong an existing call with 3 minutes. If key 4 is not pressed within 30 seconds EC II GSM SE is automatically disconnected.
4. Press 5 to terminate a possible active alarm mode. The call will be disconnected.
5. Press 7 to listen.
6. Press 8 to speak.
7. Press 0 to disconnect the call.

The call will be in progress for 3 minutes or until disconnection with keys 0 or 5. Thirty seconds before time is ended it is indicated with a tone every 5th second.

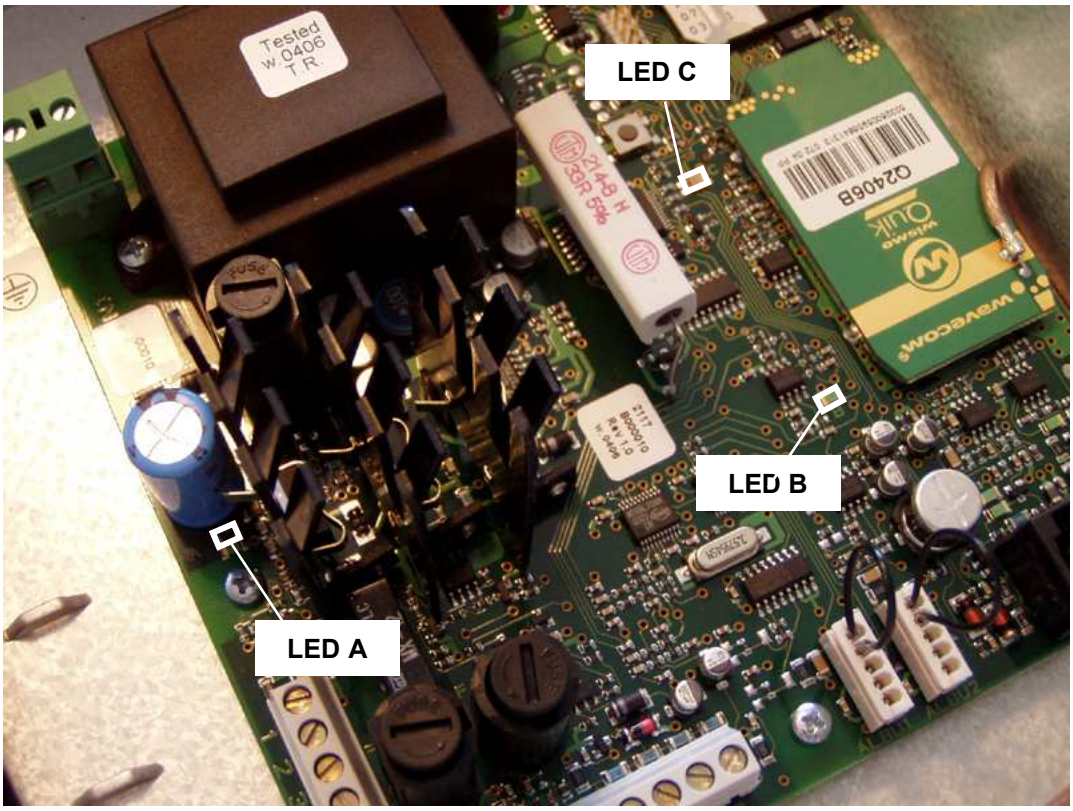
12 Updating the software

New software for EC II GSM SE is regularly released with new and extended functionality. It is possible to update an installed EC II GSM SE with new features. Please contact your local distributor or Rocom GmbH for more information of how this is performed. Contact information to Rocom GmbH is found under section 17 below

13 LED indications

Status information on EC II GSM SE is indicated with LED light signals. There is a LED on speech unit and there are three LED´s on the central unit.

13.1 The three LED´s of the central unit



13.1.1 LED A – Green LED indicates mains voltage

Flashing sequence:	**Information:**
Green fixed light	External voltage connected
Switched off	External voltage missing

13.1.2 LED B – Green LED indicates function of GSM-module:

Flashing sequence:	**Information:**
Green short flash	Module connected to GSM net
Green fixed light	Network problem / SIM card problem

13.1.3 LED C – Three colored LED (red/green/yellow):

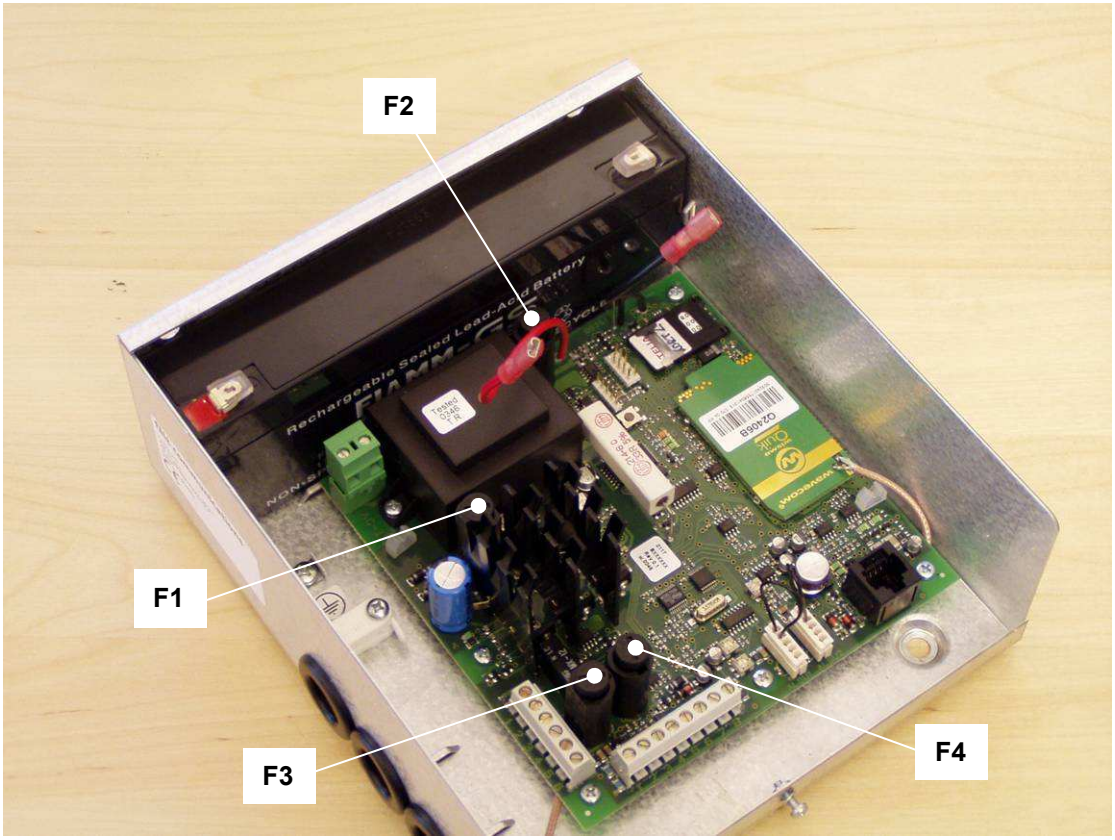
Flashing sequence:	**Information:**
Green short flash	Normal state
Green short dual flash	Active alarm mode
Yellow fixed light	Alarm registered /call is in progress
Green fixed light	Speech connection/intercom is in progress
Red/Green alternating	Programming mode
Red/Green/Red short flash	Battery alarm
Red alternating on/off	Network problem / SIM card problem
Red short dual flash	Base configuration is missing

13.2 LED´s (red/green/yellow) on the speech unit

In speech unit there is a yellow LED (left) and a red/green LED (right). The red/green LED, gives the same information as LED C in central unit.

Flashing sequence:	**Information:**
Green short flash	Normal state
Green short dual flash	Active alarm mode
Yellow fixed light	Alarm registered / call is in progress
Green fixed light	Speech connection/intercom is in progress
Red/Green alternating	Programming mode
Red/Green/Red short flash	Battery alarm
Red alternating on/off	Network problem / SIM card problem
Red short dual flash	Base configuration is missing

14 Fuses in central unit



Four glass-tube fuses are mounted in central unit. All fuses are 5 x 20 mm, 250V AC, Slow (Littelfuse type 218). Replacement of fuses must be made with same type and value:

- F1 Secondary side of transformer 630 mA T
- F2 Battery 2 A T
- F3 Emergency light 630 mA T
- F4 Output +12VDC 250 mA T

15 Troubleshooting

The most frequent problems and how correct them, are described below.

15.1 It is not possible to enter programming mode

Check the following:

- Is SIM card mounted and PIN code correctly programmed?
- Is there external power to EC II GSM SE?
- Is the fuse F1 broken?

15.2 EC II GSM SE does not make an alarm call

Check the following:

- Is there GSM network coverage in the lift shaft? Use the SMS function to check the signal strength at section 9.3 above
- Are both an **alarm receiver** and an **alarm code** programmed?

15.3 EC II GSM SE calls up automatically at power on

The lift phone's alarm button has closing function but EC II GSM SE is programmed for an alarm button with breaking function (or vice versa). Enter programming mode and select correct type of alarm button. See section 8.3.3 above.

15.4 Whistling sound from loudspeaker at alarm sequence

If there is a whistling sound, when voice communications is set up during an alarm, this may be due to acoustic feedback. Acoustic feedback may appear if the microphone and the loudspeaker are installed too close to a flat surface, causing the sound to rebound between them. See section 6.2 above.

15.5 Disturbances during voice communications

There may be problems with GSM coverage in the lift shaft. Try to move central unit or mount it standing to improve the position of the antenna. Another type of antenna might possibly be used. In worst case the GSM covering so bad that a fixed telephone line must be used. Contact your local distributor or Rocom GmbH for more information.

15.5.1 Battery alarm

EC II GSM SE has a very advanced battery test and if a battery alarm is made the battery is bad or not connected. At a battery replacement the switch S1 must be pressed, or else the EC II GSM SE will continue to send battery alarms every 3:rd day until a new battery test is done. A battery reset can also be done with an SMS. Read more under section 9.6 above.

Please note that a bad battery normally cannot be detected only by measuring the battery voltage with an instrument. The battery must instead be discharged over a longer period of time to have certain information about the capacity, which is done in the automatic battery test. If batteries of not recommended types is used it might result in false battery alarms since the battery test is adapted after a certain type of battery.

If the fuse F2 is broken the product will also generate a battery alarm. Note that the battery life time can be reduced it the lift phone is mounted in warm environments.

15.6 Technical support

Further technical support for EC II GSM SE is available from your local distributor. Contact information to Rocom GmbH is found under section 17 below

16 Programming overview

Below follows an overview of all programmable functions in EC II GSM SE. Please note that the overview describes all current functionality where some are not available in earlier product releases. Contact your local distributor or Rocom GmbH for more information.

The column marked “Def” shows the possible default setting marked with “X” or with the actual value. The column marked “Ref” shows which chapter in the manual where more information about the function is found. The programming sequences that are necessary to make an alarm are marked with gray color in the table below.

No.	Programming sequence	Function	Def	Ref
1.	P [1] < Phone No. > P	Programming of phone number to primary alarm receiver. Max 20 digits		8.3.4
2.	P [2] < Phone No. > P	Programming of phone number to secondary alarm receiver. Max 20 digits		8.3.4
3.	P [2] # P	Test of secondary alarm receiver		8.3.5
4.	P Code 1 < Alarm code 1 > P	Programming of alarm code 1. Max 10 digits		8.3.4
5.	P Code 2 < Alarm code 2 > P	Programming of alarm code 2. Max 10 digits. Alarm receivers 2-6 receive this alarm code.		8.3.4
6.	P S < 3-6 > S < Phone No. > P	Programming of phone numbers to alarm receiver 3 to 6. Max 20 digits		8.3.4
7.	P S < 3-6 > S # P	Test of alarm receiver 3 to 6.		8.3.5
8.	P * 0 2 0 P	Set alarm input in central unit to Normally Open		8.3.3
9.	P # 0 2 0 P	Set alarm input in central unit to Normally Close	X	8.3.3
10.	P * 0 2 1 P	Set alarm input in speech unit to Normally Open		8.3.3
11.	P # 0 2 1 P	Set alarm input in speech unit to Normally Close	X	8.3.3
12.	P * 0 5 3 * < 1-30 > P	Delay time to activate alarm inputs on central unit and speech unit. Unit in seconds.	5 sec	8.4.2
13.	P * 0 6 0 P	Activation P100 protocol		8.4.19

14.	P # 0 6 0 P	Activation of CPC protocol	X	8.4.19
15.	P * 1 4 0 P	Activation of answering function	X	8.4.3
16.	P # 1 4 0 P	Deactivation of answering function		8.4.3
17.	P * 1 4 1 P	Activation of active alarm mode		8.4.4
18.	P # 1 4 1 P	Deactivation of active alarm mode	X	8.4.4
19.	P * 0 8 0 * < 1-9 > P	Time between test alarms. Unit in days.		8.4.1
20.	P # 0 8 0 P	Deactivation of test alarm function	X	8.4.1
21.	P * 3 0 0 * <Phone No > P	Phone number to test alarm receiver. Max 20 digits		8.4.1
22.	P * 3 0 0 P	Test of test alarm		8.4.1
23.	P # 3 0 0 P	Deactivation of test alarm function	X	8.4.1
24.	P * 3 0 1 * < Code > P	Alarm code to test alarm receiver. Max 10 digits		8.4.1
25.	P * 3 1 0 * < Phone No > P	Phone number to battery alarm receivers. Max 20 digits.		8.4.5
26.	P * 3 1 0 P	Test of battery alarm receiver		8.4.5
27.	P # 3 1 0 P	Deactivation of battery alarm receiver	X	8.4.5
28.	P * 3 1 1 * < Code > P	Alarm code to battery alarm receiver. Max 10 digits		8.4.5
29.	P * 3 2 0 P	Activation of simple phone acknowledge		8.4.6
30.	P # 3 2 0 P	Reset of normal acknowledge sequence	X	8.4.6
31.	P * 3 2 1 P	Disconnection of acknowledge		8.4.7
32.	P # 3 2 0 P	Reset of normal acknowledge sequence	X	8.4.7
33.	P * 3 3 0 P	Allows battery alarms to be called out	X	8.4.14
34.	P # 3 3 0 P	Prevent battery alarms to be made		8.4.14
35.	P * 3 4 0 * < Phone No > P	Phone number to alarm message receiver. Max 20 digits.		9.7

36.	P ✳ 3 4 1 ✳ < 0-2 > P	Activation of SMS functionality for central unit alarm button.		9.7
37.	P ✳ 3 4 2 ✳ < 0-2 > P	Activation of SMS functionality for speech unit alarm button.		9.7
38.	P ✳ 3 4 3 ✳ < 0-2 > P	Activation of SMS functionality for test alarm.		9.7
39.	P ✳ 3 4 4 ✳ < 0-2 > P	Activation of SMS functionality for battery alarm and reset alarm.		9.7
40.	P ✳ 3 4 5 ✳ < 0-2 > P	Activation of SMS functionality for end-of-alarm.		9.7
41.	P ✳ 4 0 0 ✳ < PIN code > P	Code to SIM card		8.3.1
42.	P ✳ 4 1 0 ✳ < Old PIN code > ✳ < New PIN code > ✳ < New PIN code > P	Change of PIN code to SIM card		8.4.8
43.	P ✳ 4 2 0 ✳ < PUK code> ✳ < New PIN code > ✳ < New PIN code > P	Unlocking of SIM card due to faulty entered PIN code. Max 8 digits.		8.4.9
44.	P ✳ 5 0 0 P	Activation of filter input, active high		8.4.10
45.	P # 5 0 0 P	Deactivation of filter input	X	8.4.10
46.	P ✳ 5 0 1 P	Activation of filter input, active low		8.4.10
47.	P # 5 0 0 P	Deactivation of filter input	X	8.4.10
48.	P ✳ 5 1 0 P	Activation of flashing sequence according to EN81:70	X	8.4.13
49.	P # 5 1 0 P	Deactivation of the above flashing sequence		8.4.13
50.	P ✳ 5 1 1 P	Activation of alive flashing sequence in speech unit	X	8.4.18
51.	P # 5 1 1 P	Deactivation of alive flashing sequence in speech unit		8.4.18
52.	P ✳ 6 0 0 ✳ <Alarm type> P	Activation of programmable alarm type for lift alarm for central unit alarm button. Can be from 00d to 99d		8.4.11
53.	P # 6 0 0 P	Reset of alarm type for lift alarm for central unit alarm button to 10d	10d	8.4.11

54.	P * 6 0 1 * <Alarm type> P	Activation of programmable alarm type for lift alarm for speech unit alarm button. Can be from 00d to 99d		8.4.11
55.	P # 6 0 1 P	Reset of alarm type for lift alarm for speech unit alarm button	10d	8.4.11
56.	P * 6 1 0 P	Activation of end-of-alarm alarm call		8.4.16
57.	P * 6 1 0 * <Alarm type> P	Changing alarm type for end-of-alarm. Can be from 00d to 99d		8.4.16
58.	P # 6 1 0 P	Reset of alarm type for lift alarm for end-of-alarm	28d	8.4.16
59.	P * 6 2 0 P	Activation of reed switch	X	8.4.17
60.	P # 6 2 0 P	Deactivation of reed switch		8.4.17
61.	P * 6 3 0 P	Relay remotely controlled		8.4.15
62.	P # 6 3 0 P	Relay controlled by alarm button	X	8.4.15
63.	P * 9 0 0 * < Old code > * < New code > * < New code > P	Change of security code	1111	8.4.12
64.	P * 9 1 0 * < Phone No > P	Send current configuration as an SMS to a telephone number		9.2
65.	P * 9 9 0 P	Reset all settings to factory mode	X	8.3.1
66.	P # P	Deactivation of programming mode		8.2

17 Contact information

Rocom Energie- und Kommunikationssysteme GmbH
Lessingstr. 20
63110 Rodgau, Germany

Support: + 49 6106 66000 or via e-mail: **info@rocom-gmbh.de**
Phone: + 49 6106 66000
Fax: + 49 6106 660066
Homepage: www.rocom-gmbh.de